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TESTIMONY
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Introduction

Good morning and thank you, Mr. Chairman and Members of the Committee, for the invitation to speak to you today.

Today's testimony will focus on SAFECOM, a communications program of the Office of Interoperability and Compatibility (OIC), which resides in the Office of Systems Engineering and Development, Science and Technology Directorate, Department of Homeland Security (DHS). SAFECOM provides development, testing, evaluation, guidance, research and assistance for local, tribal, state, and Federal public safety agencies working to improve public safety response through more effective and efficient interoperable wireless communications. (By public safety we mean fire, police, emergency medical services, emergency managers, and others who have emergency response missions). Although SAFECOM is working with practitioners to develop long-term strategic initiatives without which the nation will never solve the interoperability problem, we all know terrorists, natural disasters and other emergencies will not wait for a comprehensive national solution so the program has been designed with near-, mid- and long-term goals.

Communications interoperability refers to the ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems, exchanging voice and/or data with one another on demand, in real time, as authorized. Unfortunately, the nation is heavily invested in an existing infrastructure made up largely of systems that are too often incompatible. To change this, efforts within the Federal government to address the interoperability problem are being coordinated by SAFECOM and incorporate the needs of local, state, and Federal practitioners. But there are no immediate, silver bullet fixes to the financial, technical and cultural challenges that face us. As the Government Accountability Office (GAO) acknowledged in a July 2004 report, communications interoperability is a long-term problem with no one-size-fits-all solution.

Public Safety Communications Environment

Interoperability is not a new issue; it has plagued the public safety community for decades. It was a problem in Washington, D.C., when the Air Florida flight crashed into

the Potomac in 1982. It was a problem in New York City when the Twin Towers were first attacked in 1993. It was a problem in 1995 when the Murrah Building was destroyed in Oklahoma City, and in 1999 at Columbine. The reality is that today, too many public safety personnel cannot communicate by radio with personnel from other agencies or disciplines because their equipment is still incompatible, or the frequencies they are assigned are different. They operate on 10 different frequency bands and run communications systems that are often proprietary, and that are too often 30 or more years old, in an era when the technology lifecycle is only 18 to 24 months. Over 90% of the nation's public safety wireless infrastructure is financed, owned, operated, and maintained by the more than 60,000 local jurisdictions that provide emergency services to the public and only a very tiny fraction of this funding is Federal. National efforts to fix the problem have historically been erratic, uncertain, and – until recently – uncoordinated. The attacks on September 11, 2001, made clear this had to change.

Since September 11, 2001, significant progress has been made to improve communications interoperability for the public safety community. Yet it is apparent that more must be achieved. Much of this progress can be attributed to the priority that both the Administration and Congress have placed on solving the problem of communications interoperability. In 2001, SAFECOM was established as a Presidential Management Initiative and charged with strengthening interoperability at all levels of government by coordinating Federal programs, initiating a comprehensive standards program, and developing a national architecture. In 2004, the Department established OIC to further strengthen and integrate interoperability and compatibility efforts to improve local, tribal, state, and Federal public safety preparedness and response. OIC was directed to:

- Identify and certify all DHS programs that touch on interoperability;
- Support the creation of interoperability standards;
- Establish a comprehensive research, development, testing, and evaluation (RDT&E) program for improving public safety interoperability;
- Integrate coordinated grant guidance across all DHS grant making agencies that touch on public safety interoperability;
- Oversee the development and implementation of technical assistance for public safety interoperability;
- Conduct pilot demonstrations;
- Create an interagency interoperability coordination council; and
- Establish an effective outreach program.

Long-Term Vision

Practitioners helped SAFECOM articulate a long term vision for interoperability which projects that, not later than 2023, first responders will operate on a national system-of-systems using standards-based equipment that provides the capability to respond to an incident anywhere in the country, using their own equipment, on any network, and on dedicated public safety spectrum. They will be able to communicate with each other as authorized via voice, data, and video on demand and in real time. Making this vision flesh will require work in five critical success areas, including:

1. A common set of guidelines and criteria for public safety communications systems in conjunction with a national architecture framework;
2. Coordinated testing and evaluation processes to ensure communications equipment meets critical requirements;
3. Standardization of equipment fortified by interim grant guidance measures;
4. Coordinated spectrum policy that meets the needs of the public safety community; and
5. Certification of state communications plans.

None of these initiatives will be accomplished overnight, but many of them are already beginning to strengthen interoperability in the public safety community.

Near-Term Initiatives

While fixing the nation's interoperability problem will require a sustained effort, we recognize that we must quickly ensure sufficient interoperability at all levels of government to meet emergencies of any kind. To do this, DHS and SAFECOM has initiated a number of near-term initiatives, including development of the Interoperability Continuum, development of statewide planning tools, execution of the RapidCom Initiative, publication of a national statement of requirements, creation of a conformance testing program, development of coordinated grant guidance for inclusion in every Federal grant program, creation of a national baseline, identification of public safety spectrum needs, development of emergency response plans for immediate communications capabilities, and coordination with Office of State and Local Government Coordination and Preparedness' (SLGCP) Interoperable Communications Technical Assistance Program (ICTAP).

Statement of Requirements and a National Architecture Framework

Interoperability plans to support responses to an incident need to be developed based on a common set of guidelines and criteria for public safety communications systems and these should be aligned with a national architecture framework. Only when these guidelines are universally recognized and followed will first responders and the larger public safety community be able to communicate effectively. To that end, SAFECOM published Version 1.0 of the first ever comprehensive Public Safety Statement of Requirements for Communications and Interoperability (SoR). Developed with public safety practitioner input, the SoR defines the functional requirements for public safety communications. Subsequent versions will further refine these technical requirements so that industry will have a blueprint to which to build technologies that address public safety's needs. This SoR also serves as the basis for developing a national architecture framework for communications interoperability. SAFECOM is working to develop a Public Safety Architecture Framework (PSAF) that, with the SoR, will serve as a tool to help the nation's first responder agencies understand the technical requirements and national migration path toward fully interoperable communications systems without imposing requirements that stifle innovation.

Coordinated Testing and Evaluation of Equipment

The next step in achieving national communications interoperability is the development of coordinated testing and evaluation processes to ensure communications equipment meets the critical needs of first responders. Public safety is faced with many complex procurement decisions and frequently has to hope that the equipment they buy will do what it claims. To ensure that public safety is able to truly trust the claims made by vendors, communications equipment needs to be tested and evaluated based on first responder needs and capabilities. To do this, SAFECOM created a testing and evaluation working group to help ensure that methodologies for testing and evaluation of interoperability products are technically sound and comparable across testing laboratories. The working group members are practitioners and subject matter experts from law enforcement, fire services, and emergency medical services. These members help review and develop test criteria and serve the program by determining which products should be evaluated.

Standardization of Equipment Fortified by Interim Grant Guidance

Standardization of equipment fortified by interim grant guidance measures is an essential step in achieving communications interoperability. The equipment must adhere to communications standards that allow for improved interoperability. As standards are created, funding solutions must also be implemented to help jurisdictions meet interoperability goals and requirements. To better coordinate the funding of interoperability solutions, such as purchasing new equipment, developing state plans, or other activities, we resolved a major hurdle in achieving interoperability: conflicting Federal grant guidance. In the past, Federal grant programs for public safety communications were not coordinated and too often resulted in the use of limited Federal resources to create systems that made interoperability even more difficult to achieve.

Our coordinated grant guidance outlines eligibility for grants, the purposes for which grants can be used, and guidelines for implementing a wireless communications system in order to help maximize the efficiency with which public safety communications related grant dollars are allocated and spent. To ensure consistency in interoperability grant solicitations, this guidance has been included in grant programs administered by the Department of Justice and other agencies within DHS. Within DHS, the Office for State and Local Government Coordination and Preparedness (SLGCP) reports that it has provided more than $1.5 billion dollars in direct funding to local jurisdictions, urban areas, and states. SLGCP has three primary grant programs that have incorporated SAFECOM's grant guidance on issues regarding communications interoperability. These programs are the State Homeland Security Grant Program, Urban Areas Security Initiative Grant Program, and the Law Enforcement Terrorism Prevention Grant Program. Many of the system procurements and enhancements supported by this funding are still being implemented. More thorough monitoring of these projects is required to ascertain whether they achieve their intended goals.

It is important to note, however, that although SAFECOM has developed consensus guidance and tools to improve the grant making process, the program does not directly manage or provide funding to local or state agencies for communications projects. Grant guidance is an important step toward improving national interoperability because it helps to align public safety communications related grant dollars with the national effort to improve interoperability at all levels of government.

OMB also requires all Federal agencies demonstrate their programs are fully aligned with SAFECOM guidance in developing their own communications plans.

National Baseline of Public Safety Communications

The National Interoperability Baseline study will provide the nation's first statistically significant, quantitative measurement of the current state of public safety communications interoperability. The development of the survey methodology was initiated in January 2005 and the resulting study will provide an understanding of the current state of interoperability nationwide upon completion. Additionally, it will serve as a tool to measure future improvements made through local, state, and Federal public safety communications initiatives.

The survey instrument developed for Interoperability Baseline will allow SAFECOM to identify areas with interoperability shortfalls, track the impact of Federal programs and measure the success of these programs, establish an on-going process and mechanism to measure the state of interoperability on a recurring basis, and develop an interoperability baseline self-assessment tool for local and state public safety agencies.

Coordinated Spectrum Policy That Meets the Needs of Public Safety

Radio spectrum is a finite resource—there is only so much available and it is shared by public safety, radio broadcasters, government users, and other commercial and private consumers. The large demand for this resource can lead to overcrowding, which, in turn can cause delays in or disruption of communication for public safety. The Federal Communications Commission has allocated certain frequencies to public safety, but these allocations are fragmented, creating challenges for communications among different agencies and jurisdictions. In the Intelligence Reform and Terrorism Prevention Act of 2004, Congress required the Federal Communications Commission (FCC) in consultation with DHS and the National Telecommunications and Information Administration (NTIA) to conduct a study to assess the spectrum needs for local, state, and Federal first responders, which is due in December 2005. SAFECOM is currently assessing public safety spectrum needs in support of the President's national spectrum management initiative. DHS, in consultation with the Department of Commerce and other relevant agencies, is developing a Spectrum Needs Plan out of these assessments which will be delivered to the President by the end of November 2005.

Certification of State Communications Plans

Interoperability requires, before all else, simple operability – that is, communications within the local agency. As Hurricane Katrina demonstrated, in the absence of a reliable network across which responders within an agency can effectively communicate, interoperability is both irrelevant and impossible. Strengthening and ensuring basic level public safety communications capabilities, therefore, is the first task. But progressing from agency-specific operability towards multi-jurisdictional and multi-disciplinary interoperability requires attention to more than technology.

Some believe the introduction of new technologies alone can solve our interoperability problems. But adding equipment addresses only one part of what a fully robust, reliable, and interoperable public safety communications system requires. With input from the public safety community, we have identified five key building blocks required to achieve interoperability. Governance, Standard Operating Procedures (SOP), Technology, Training and Exercises, routine use (Usage) of interoperable systems, and regular Maintenance must all be present for interoperability to be possible. To help public safety agencies and especially the policy levels of government understand the interrelationship of all of these factors, we developed a tool called the "Interoperability Continuum." This planning tool explains how all these elements relate to each other. For example, if a city within a region procures new equipment it may have a technical interoperability capability, but unless it has also conducted exercises to test procedures (and find points of failure) and concepts of operation, and developed policies agreeable to the entire region, it is unlikely the new equipment can be effectively integrated into regional interoperability plans. As states develop their emergency communications plans, we recommend that they address all the elements of the Interoperability Continuum.

Statewide Planning Tools

Statewide communications plans are often unsuccessful because the top-down approach fails to consider the requirements of the first responders who are the primary users and who control the most of the wireless infrastructure.

In 2004, SAFECOM partnered with the Commonwealth of Virginia and the Department of Justice to develop a strategic plan for improving statewide interoperable communications for the state. The effort was based on SAFECOM's "bottom-up," locally-driven approach. The planning process included six regional focus group sessions, which culminated in a final strategic planning session. The focus group sessions captured perspectives from numerous local public safety representatives throughout the Commonwealth; these perspectives were used in the final strategic planning session in which recommendations for key initiatives were developed as part of a statewide strategic plan for improving public safety communications and interoperability.

Based on lessons learned from the Virginia planning process, SAFECOM published the Statewide Communications Interoperability Planning (SCIP) Methodology as a model for integrating practitioner input into a successful statewide strategic plan to every state. The

SCIP Methodology serves as one approach for states to consider as they initiate statewide communications planning efforts.

We are also implementing Section 7304 of the Intelligence Reform and Terrorism Prevention Act of 2004 (Public Law 108-458), which authorized the Secretary of Homeland Security to carry out at least two Regional Communications Interoperability Pilots (RCIP). In accordance with the congressional criteria for determining the location of the pilot sites, as well as criteria outlined by the program itself, SAFECOM selected the State of Nevada and the Commonwealth of Kentucky as RCIP locations. SAFECOM, in coordination with the Office of State and Local Government Coordination and Preparedness' Interoperable Communications Technical Assistance Program (ICTAP), is helping both states implement the SCIP methodology.

Building on lessons learned from the SCIP Methodology and earlier SAFECOM initiatives, the RCIP projects will help us identify models for improving communications and interoperability that take into account the wide range of challenges across the nation. When the projects are complete, Nevada and Kentucky will each have improved interoperability plans and we will be able to use the lessons learned to better develop or strengthen replicable tools and methodologies which will be made available to public safety practitioners, as well as to local and state governments. An interim report regarding the progress of the pilot projects has been submitted to Congress. A final report will be provided to Congress in June 2006.

We believe statewide emergency communications plans are fundamental to an effective response to a catastrophic event. As states continue to develop their own plans, SAFECOM recommends that they do so in coordination with SAFECOM methodologies and guidance.

RapidCom

On July 22, 2004, President Bush formally announced the RapidCom initiative, a program designed to ensure that a minimum level of public safety interoperability would be in place in ten high-threat urban areas by September 30, 2004.

In coordination with the Office of State and Local Government Coordination and Preparedness (OSLGCP), the Department of Justice's 25 Cities Program, and the DHS Wireless Management Office, SAFECOM worked closely with public safety leaders in ten high-risk urban areas centered in Boston, Chicago, Houston, Jersey City, Los Angeles, Miami, New York, Philadelphia, San Francisco, and the Washington Metropolitan Area to assess their communications interoperability capacity and needs, and to identify and implement solutions. In keeping with the SAFECOM "bottom-up" approach, local officials drove the design and implementation of solutions in their jurisdictions.

With the on-time completion of the RapidCom project, incident commanders in each of

the urban areas now have confirmed they have the ability to adequately communicate with each other and their respective command centers within one hour of an incident.

Interoperable Communications Technical Assistance Program (ICTAP)

A key component in achieving interoperable communications across the nation is providing on-site technical assistance to states and urban areas. SLGCP funds ICTAP, a technical assistance program designed to enhance interoperable communications between local, state, and Federal first responders and public safety officials. The program provides free support to states and urban areas with the goal of enabling local public safety officials to communicate across disciplines and jurisdictions via radio communications systems, exchanging voice and/or data with one another on demand, in real time, as authorized.

Conclusion

These initiatives are only part of what the SAFECOM program has undertaken to advance communications interoperability across the Nation. This nation is heavily invested in an existing infrastructure that is too often inadequate to the basic communications requirements of individual agencies and not interoperable. We must continue to pursue a comprehensive strategy that takes into account technical and cultural issues associated with improving interoperability, which recognizes the challenges associated with incorporating legacy equipment and practices in constantly changing technology and cultural environments, and which ensures that the needs of the front line of emergency response – the first responders – are met. Though many challenges remain, we believe we have accomplished a great deal in the short time DHS has managed this program.

We are confident that with your continuing support and the assistance of our many Federal partners, we will continue to move towards a world where lives and property are never lost because public safety agencies are unable to communicate or lack compatible equipment and training resources.

Appendix I: OIC Authorities from the Intelligence Reform and Terrorism Prevention Act of 2004

Congress, with the passage of the Intelligence Reform and Terrorism Prevention Act of 2004 (PL 108-458) less than a year ago, gave OIC and SAFECOM legislative authority to carry out its responsibilities. Before passage of this act, responsibility for addressing interoperability was spread across three different agencies. Section 7303 of the Act directed SAFECOM to:

- coordinate with other Federal agencies to establish a comprehensive national approach to achieving public safety interoperable communications;
- develop, with Federal agencies and state and local authorities, minimum capabilities for communications interoperability for Federal, state, and local public safety agencies;
- accelerate voluntary consensus standards for public safety interoperable communications;
- develop and implement flexible open architectures for short- and long-term solutions to public safety interoperable communications;
- identify priorities for research, development, and testing and evaluation within DHS and assist other Federal agencies in doing the same with regard to public safety interoperable communications;
- provide technical assistance to state and locals regarding planning, acquisition strategies, and other functions necessary to achieve public safety communications interoperability;
- develop and disseminate best practices to improve public safety communications interoperability;
- develop appropriate performance measures and milestones to measure the nation's progress to achieving public safety communications interoperability;
- provide technical guidance, training, and other assistance to support the rapid establishment of consistent, secure, and effective interoperable communications capabilities in the event of an emergency in urban and other areas determined by the Secretary to be at consistently high levels of risk from terrorist attack; and develop minimum interoperable communications capabilities for emergency response providers.

Appendix II: Tools and Methods based on Local and State Pilots

- **Communications Tabletop Exercise Methodology,** a process for a communications-focused tabletop exercise replicable across urban areas.
- **Tabletop Exercise After-Action Report**, a template for capturing key findings and identifying gaps following each tabletop exercise.
- **Interoperability Pocket Guide,** a process for creating an area-specific interoperability pocket guide to ensure local public safety officials are aware of current capabilities available in their areas.

- **Templates for Improving Interoperability,** including governance charter, standard operating procedure (SOP), and memorandum of agreement (MOA) templates to help communities improve interoperability.
- **Operational Guide for the Interoperability Continuum – Lessons Learned from RapidCom,** which outlines the importance of each element of the Interoperability Continuum, provides common challenges to consider when working towards improved interoperability, and recommends key actions to increase an area's capabilities.